

WHAT IS CLAIMED:

- 1 1. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound capable of inhibiting
3 an enzyme that is important to energy storage or utilization in said microorganism.
- 1 2. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound capable of inhibiting
3 the production of ADP-glucose.
- 1 3. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound capable of inhibiting
3 the conversion of α -glucose-1-phosphate + ADP into ADP-glucose + Ppi.
- 1 4. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound capable of inhibiting
3 the chain elongation of ADP glucose.
- 1 5. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound to inhibit the activity
3 of glycogen synthase (EC 2.4.1.21).
- 1 6. A method of treating a microorganism infection in a patient, which comprises
2 administering to said patient an effective amount of a compound capable of inhibiting
3 the activity of ADP glucose pyrophosphorylase (EC 2.7.7.27).
- 1 7. The method according to any one of claims 1 - 6, wherein said patient is a human.
- 1 8. The method according to any one of claims 1 - 6, wherein said pathogenic
2 microorganism is a member selected from the group consisting of *Chlamydia*
3 *pneumoniae*, *Chlamydia trachomatis*, *Escherichia coli* O157, *Haemophilus influenzae*,
4 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Salmonella typhimurium* and
5 *Vibrio cholerae*, *Streptococcus pneumonia*, *Yersinia pestis*, *Bacillus subtilis* and
6 *Bacillus anthracis*.
- 1 9. The method according to claim 8, wherein said patient is a human.

- 1 10. The method according to claim 7, wherein said compound is adenosine
2 boranodiphosphoglucose, or a pharmaceutically acceptable salt thereof.
- 1 11. The method according to claim 8, wherein said compound is adenosine
2 boranodiphosphoglucose, or a pharmaceutically acceptable salt thereof.
- 1 12. A pharmaceutical composition for the treatment of a microorganism infection which
2 comprises a pharmaceutically acceptable carrier and an effective anti-microbial
3 amount of adenosine boranodiphosphoglucose, or a pharmaceutically acceptable salt
4 thereof.
- 1 13. A pharmaceutical composition for the treatment of a microorganism infection which
2 comprises a pharmaceutically acceptable carrier and an effective anti-microbial
3 amount of a compound which is an inhibitor of ADP-glucose pyrophosphorylase (EC
4 2.7.7.27), or a pharmaceutically acceptable salt thereof.
- 1 14. A pharmaceutical composition for the treatment of a microorganism infection which
2 comprises a pharmaceutically acceptable carrier and an effective anti-microbial
3 amount of a compound which is an inhibitor of glycogen synthase (EC 2.4.1.21), or a
4 pharmaceutically acceptable salt thereof.
- 1 15. A method of identifying a compound capable of inhibiting the growth of pathogenic
2 microorganisms in a mammalian patient, which comprises:
- 3 a) identifying an enzyme that is important to energy storage or utilization in said
4 pathogenic microorganism, which enzyme is not present in said mammalian patient;
5 and
- 6 b) identifying a compound that inhibits said enzyme in said pathogenic microorganism.
- 1 16. The method according to claim 15, wherein said mammalian patient is a human
2 patient.
- 1 17. The method according to claim 15, wherein said pathogenic microorganism is a
2 member selected from the group consisting of *Chlamydia pneumoniae*, *Chlamydia*
3 *trachomatis*, *Escherichia coli* O157, *Haemophilus influenzae*, *Mycobacterium leprae*,

Mycobacterium tuberculosis, *Salmonella typhimurium* and *Vibrio cholerae*,
Streptococcus pneumoniae, *Yersinia pestis*, *Bacillus subtilis* and *Bacillus anthracis*.

18. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms which comprises identifying a compound that inhibits the conversion of α -glucose-1-phosphate + ATP into ADP-glucose + Ppi.

19. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms which comprises identifying a compound that inhibits the chain elongation of ADP glucose.

20. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms by interfering with energy storage or utilization in said microorganism which comprises identifying a compound that inhibits the activity of ADP glucose pyrophosphorylase (EC 2.7.7.27).

21. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms by interfering with energy storage or utilization in said microorganism which comprises identifying a compound that inhibits the activity of glycogen synthase (EC 2.4.1.21).

22. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms by interfering with the activity of ADP-glucose pyrophosphorylase (EC 2.7.7.27) which method comprises incubating a sample of bacteria in a media in the presence or absence of a test compound, and assessing the effect on conversion of α -glucose-1-phosphate, wherein a lower level of conversion of α -glucose-1-phosphate in the presence of said test compound, compared with the level of conversion of α -glucose-1-phosphate in the absence of said test compound, indicates that said test compound interferes with the activity of ADP glucose pyrophosphorylase (EC 2.7.7.27).

23. A method of identifying a compound capable of inhibiting the growth of pathogenic microorganisms by interfering with the activity of glycogen synthase (EC 2.4.1.21) which method comprises incubating a sample of bacteria in a solution containing a known amount of ADP glucose in the presence or absence of a test compound, and assessing the effect on chain elongation of ADP glucose in the presence of said test

6 compound, compared with the level of chain elongation in the absence of said test
7 compound, indicates that said test compound interferes with the activity of glycogen
8 synthase (EC 2.4.1.21).

1 24. A method of identifying a compound capable of inhibiting the growth of pathogenic
2 microorganisms by interfering with the activity of ADP glucose pyrophosphorylase
3 (EC 2.7.7.27) which method comprises exposing a substrate comprising ADP glucose
4 pyrophosphorylase (EC 2.7.7.27) to a plurality of test compounds and identifying a
5 test compound which binds to said ADP glucose pyrophosphorylase (EC 2.7.7.27).

1 25. A method of identifying a compound capable of inhibiting the growth of pathogenic
2 microorganisms by interfering with the activity of glycogen synthase (EC 2.4.1.21)
3 which method comprises exposing a substrate comprising glycogen synthase (EC
4 2.4.1.21) to a plurality of test compounds and identifying a test compound which
5 binds to said glycogen synthase (EC 2.4.1.21).

1 26. The method of claim 24, wherein said substrate comprises a plurality of ADP glucose
2 phosphorylase (EC 2.7.7.27) molecules and said test compounds comprise a label to
3 permit identification of a test compound which binds to ADP glucose
4 pyrophosphorylase (EC 2.7.7.27).

1 27. The method of claim 24, wherein said substrate comprises a plurality of glycogen
2 synthase (EC 2.4.1.21) molecules and said test compounds comprise a label to permit
3 identification of a test compound which binds to glycogen synthase (EC 2.4.1.21).

1 28. The method according to any one of claims 18 - 27, wherein said pathogenic
2 microorganism is a member selected from the group consisting of *Chlamydia*
3 *pneumoniae*, *Chlamydia trachomatis*, *Escherichia coli* O157, *Haemophilus influenzae*,
4 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Salmonella typhimurium* and
5 *Vibrio cholerae*, *Streptococcus pneumoniae*, *Yersinia pestis*, *Bacillus subtilis* and
6 *Bacillus anthracis*.

1 29. A compound capable of inhibiting the growth of pathogenic microorganisms in a
2 mammalian patient identified by the method according to any one of claims 18 - 27.

- 1 30. A method of treating a microorganism infection in a patient which comprises
2 administering to said patient an effective amount of a compound identified by the
3 method according to any one of claims 18-27.
- 1 31. A pharmaceutical composition for the treatment of a microorganism infection which
2 comprises a pharmaceutically acceptable carrier and an effective antimicrobial
3 amount of a compound identified by the method according to any one of claims 18-
4 27.